

What is claimed is:

1. A semiconductor device comprising:
a source, a gate and a drain;
a source-drain depletion region in a substrate under the gate;
5 a single deep-pocket ion implant in the source-drain depletion region; and
a single shallow-pocket ion implant in the source-drain depletion region.
2. The semiconductor device as recited in claim 1 wherein;
the deep-pocket ion implant is asymmetric with respect to a central axis of the
10 semiconductor device.
3. The semiconductor device as recited in claim 1 wherein;
the shallow-pocket ion implant is asymmetric with respect to a central axis of the
semiconductor device.
- 15 4. The semiconductor device as recited in claim 1 wherein;
both the deep-pocket ion implant and the shallow-pocket ion implant are
asymmetric with respect to a central axis of the semiconductor device.
- 20 5. The semiconductor device as recited in claim 1 wherein;
the deep pocket ion implant is at a drain side; and
the shallow pocket ion implant is at a source side.
- 25 6. The semiconductor device as recited in claim 1 wherein;
the deep pocket ion implant is at a source side; and
the shallow pocket ion implant is at a source side.
7. The semiconductor device as recited in claim 1 wherein;
the deep pocket ion implant is at a drain side; and

the shallow pocket ion implant is at a drain side.

8. The semiconductor device as recited in claim 1 wherein;
the deep pocket ion implant is at a source side; and
the shallow pocket ion implant is at a drain side.

9. The semiconductor device as recited in claim 1, further comprising:
a secondary deep-pocket ion implant countered by ions of the source.

10. The semiconductor device as recited in claim 1, further comprising:
a secondary shallow-pocket ion implant countered by ions of the source.

11. The semiconductor device as recited in claim 1, further comprising:
a secondary deep-pocket ion implant countered by ions of the drain.

12. The semiconductor device as recited in claim 1, further comprising:
a secondary shallow-pocket ion implant countered by ions of the drain.

13. The semiconductor device as recited in claim 1, further comprising:
a secondary deep-pocket ion implant countered by ions of the source; and
a secondary shallow-pocket ion implant countered by ions of the source.

14. The semiconductor device as recited in claim 10, further comprising:
a secondary deep-pocket ion implant countered by ions of the drain; and
a secondary shallow-pocket ion implant countered by ions of the drain.

15. The semiconductor device as recited in claim 10, further comprising:
a secondary deep-pocket ion implant countered by ions of the source; and
a secondary shallow-pocket ion implant countered by ions of the drain.

16. The semiconductor device as recited in claim 1, further comprising:

- a secondary deep-pocket ion implant countered by ions of the drain; and
- a secondary shallow-pocket ion implant countered by ions of the source.

5 17. A method of fabricating a semiconductor device with asymmetric ion implants comprising the steps of:

implanting primary and secondary deep-pocket ion implants in a source-drain depletion region;

10 implanting primary and secondary shallow-pocket ion implants in the source-drain depletion region; and

countering the secondary deep-pocket ion implant and the secondary shallow-pocket ion implant.

18. The method of claim 17 and further comprising the steps of:

15 implanting ions to form the source and drain;

countering the secondary deep pocket implant with ions forming the drain; and

countering the secondary shallow pocket implant with ions forming the source.

19. The method of claim 17 and further comprising the steps of:

20 implanting ions to form the source and drain;

countering the secondary deep pocket implant with ions forming the source; and

countering the secondary shallow pocket implant with ions forming the drain.

20. The method of claim 17 and further comprising the steps of:

25 implanting ions to form the source and drain;

countering the secondary deep pocket implant with ions forming the source; and

countering the secondary shallow pocket implant with ions forming the source.

21. The method of claim 17 and further comprising the steps of:

30 implanting ions to form the source and drain;

countering the secondary deep pocket implant with ions forming the drain; and
countering the secondary shallow pocket implant with ions forming the drain.